

**DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY: TIRUCHIRAPPALLI - 620 015**

30.12.2013

Minutes of the Pre-Bid conference

Tender Notification No.: NITT /F.NO: 047/UG LAB MODERNISATION/PLAN 2013-2014/MME

The pre-bid conference was held on 30.12.2013 at 2.00 pm. in the committee room of MME to discuss the specification published in the tender. All other terms and conditions mentioned in the tender document remains same.

Based on the discussion, the committee recommends the following amendments to the specification.


Specification for Automated Microstructure Sample polisher

Original tender specification		Amended specification
Type	Automatic with Microprocessor control & Programmable with a minimum of 25 custom methods.	No amendment
Grinding-cum-Polishing machine <ul style="list-style-type: none"> ➤ Composite Body and Bowl ➤ Magnetic Platen ➤ Cover/ Lid for Platen ➤ Inlet water spout and drain ➤ Splash Guard ➤ Polishing/ Grinding Pressure Head for both "Central" and 'Individual' force ➤ Provision for incorporating "Automatic Multiple Abrasive Slurry Dispensing System" ➤ Specimen holders having the provision to hold minimum six (6) Nos. mounted specimens of diameter 25 mm ➤ Specimen Leveling Device ➤ base made of high strength, corrosion-resistant material (Aluminum/Aluminum-base alloy, or any other equivalent material) ➤ shall be coated with suitable stain and chip-resistant coating ➤ enable easy cleaning Platen for Grinding/ Polishing <ul style="list-style-type: none"> ➤ Dynamically-balanced, universal platen made of suitable corrosion resistant material for performing both grinding and polishing operations. The platen shall be driven by a high torque motor to prevent stalling under high loads and also maintain uniform platen speed. ➤ Platen Diameter: 200 mm ➤ Platen Rotation: anticlockwise ➤ Platen Speed: Variable; between 50 to 500 rpm or better ➤ Splash Guard: Removable "Splash guard"/Ring shall be provided. Platen Area Lighting: LED-lighting of the platen area shall be provided for enabling monitoring of the preparation process		<ul style="list-style-type: none"> ➤ Platen Diameter: 250 mm ➤ Platen Speed: Variable; between 50 to 600 rpm or better ➤ Specimen holders having the provision to hold minimum five (5) or (6) Nos. of hot or cold mounted specimens of diameter 25 mm
Mounting	Table top / Floor mounted	No amendment
Number of Stations	Single Platen (for grinding & polishing)	No amendment
Power Head for Grinding/ Polishing:	Pneumatically Controlled for up and down	No amendment

	movement with Z-axis material removal by depth system.	
Inlet Water:	Supply line tap water	No amendment
Abrasive Slurry Dispensing:	Manual with provision for future automation	Manual or Automatic
Polishing/ Grinding Pressure Head	<ul style="list-style-type: none"> ➤ Force Application: 'Central' and 'Individual' force-type polishing head for preparing 1-6 mounted samples of 25 mm diameter. ➤ Pressure Head Movement: Up-and-down with pneumatic (Oil-free Air Compressor/ N2- gas cylinder) control. ➤ Pressure Head Rotation: Clockwise and Anticlockwise ➤ Pressure Head Speed: Variable Speed; 50-60 rpm, or better 	<ul style="list-style-type: none"> ➤ Pressure Head Speed: Variable Speed; 50-150 rpm, or better ➤ Operating Console: Control panel with touch pad/touch screen or push Knop buttons and display system for observing operating parameters and Emergency Stop .
Specimen Holding/ Moving Plate	<p>Round 'Specimen Moving Plate' of appropriate dimensions to accommodate minimum 6 (six) Nos. mounted (25 mm diameter) samples. The plate should be compatible with the pressure head attachment.</p> <p>Leveling Device: Shall be provided for specimen leveling in the specimen holder plate</p> <p>Electronics: Microprocessor Controlled</p> <p>Operating Console: Control panel with touch pad/touch screen Operation buttons and display system for observing operating parameters and Emergency STOP</p>	
Power supply: 220 V ± 10%; 50 Hz; 1 phase	Ambient temperature: 15 ^o - 40 ^o C, Relative humidity: up to 90% RH (max.)	No amendment
CONSUMABLES	<ul style="list-style-type: none"> (a) Magnetic disc – 1 Nos., Bimetallic plates 8" Diameter – 5 Nos. (b) Diamond suspension oil based (9 µm particle size) – 2 bottle (240 ml) (c) Diamond suspension oil based (3 µm particle size) – 2 bottle (240 ml) (d) Diamond suspension oil based (1 µm particle size) – 2 bottle (240 ml) (e) SiC sheet of 320 grit adhesive backed – 1pkt of100 pcs. (f) Polishing cloth adhesive backed (for 9 µm) – 10 Nos., Polishing cloth adhesive backed (for 3 µm) – 10 Nos. (g) Polishing cloth adhesive backed (for 1 µm) – 10 Nos.,Masterpolish suspension – 1 Bottle (950 ml) (h) Lubricant for diamond polishing – 950 ml <p>The dia of cloth or abrasive paper from (g) to (k) will be 200 mm</p>	<p>CONSUMABLES</p> <ul style="list-style-type: none"> (a) Magnetic disc – 1 Nos., (b) Diamond suspension (9, 3, 1 µm particle size) – 2 bottle 500ml (c) SiC sheet of 320 grit – 1pkt of100 pcs. (d) Polishing cloth 9, 3, 1 µm – 10 Nos., (e) Oxide polish suspension –950 ml to 1 lit (f) Lubricant for diamond polishing – 950 ml to 1 lit
Mounting press		Hot Mounting press
The equipment shall be used for mount specimens with thermosetting resins, including all Phenolics.		No amendment
Mount Metallurgical, Petrographic and Other Materials for Microstructural Analysis		No amendment
Easy-To-Use Automatic Mounting Presses		No amendment
(25mm - 50mm) Duplex Mold Capacity		Single Mold OR Double Mold Capacity
Quickly Mount up to Two Specimens in a Single Cycle		Single Mold OR Double Mold Capacity
LCD Display with Backlit Lighting		No amendment
Electro-Hydraulic Operation		No amendment
Upgrades Capability with Automatic Method Programmability		No amendment
Imperial or Metric Units Resettable, Built-in Circuit, Universal Power Supply		No amendment
Operation		No amendment
Power Source	84-264VAC, 50-60Hz, 1 Phase	No amendment

Molding Pressure	1200 - 4400 psi (80 - 300 bars) in 100 psi (5 bar) increments	No amendment
Molding Temperature	120° - 360 °F in 20 °F increments, 50° - 180 °C in 10 °C increments	80° - 180 °C in 5°C - 10°C increments
Heating Power	1500 Watt @ 115/230 VAC	No amendment
Heating Time	0 - 20 minutes in 10 second Increments	0 - 15 minutes in 0.5 min Increments
Cooling Time	0 - 30 minutes in 10 second Increments	0 - 20 minutes in 0.5 min Increments
Mold Type	Cylindrical, including upper and Lower rams and duplex mold Spacer	Cylindrical including upper and lower rams .single or duplex mold
Closure Type	insulated bayonet with position Detent	No amendment
Mold Diameters	25mm, 30mm, 40mm, 50mm, 1", 1¼", 1½" and 2"	25mm should be quoted in the main unit. 30mm ,40mm and 50mm to be quoted in optional
Water Flow rate	2 liters/minute minimum	Normal tap water
Water Pressure	45-75 psi (3-5 bar)	1-10 bar / 14.5-145 psi
Method Programmability	4 Preprogrammed Methods per mold size, 25 User Definable Methods	No amendment
Preload Pressure	0 - 400 psi in 50 psi increments, 0 - 30 bar in 5 bar increments	Not required
Thermoplastic Function	Automatically sets correct parameters for thermoplastic resins such as Trans Optic and cools the mount in a controlled, linear fashion	No amendment
Touch pad controls	On/Off, Heat Time, Cool Time, Molding Temperature, Molding Pressure, Mold Size, Ram Up/Down, Manual Cool, Cycle Start, Cylinder Open, Unit of Measure, Language, Thermoplastic, Load and Save Methods	Manual Cool or Auto Cool
	Cold Mounting press	<p>Cold Mounting press cold mounting equipment with spacious vacuum chamber & User friendly operation.</p> <ol style="list-style-type: none"> 1) Handy inlet tube for trouble-free filling of the mounting cups, and no spilling 2) Easy-to-read display and touch pad keys for user-friendly operation 3) Transparent lid for a clear view during impregnation 4) Disposable consumables for optimal safety and less cleaning 5) Inbuilt air injector pump or external should be provided. 6) Practical mounting cup holder with room for up to 8 mounting cups 7) Power Supply: 100 to 240V / 50-60Hz / Single Phase 8) Equipment should be worked on compressed air supply. 9) Mounting cup holder of 8 cups to be quoted. 10) For making True porosity & cracks visible, Fluorescent dye to be quoted. 11) Polypropylene mounting cups 25mm diameter-10nos & flexible reusable silicon rubber cups 25mm diameter-5 nos and clips for holding small specimens 12) Epoxy & acrylic cold mounting resin and hardener -2 litre 13) Spares should be quoted for minimum 2 years trouble free operations.
Abrasive Cutter		To be Quoted as Optional

Maximum cutting capacity	Maximum 4.375" (110mm) diameter sample	No amendment
Configuration	4 cutting actions	No amendment
	z-axis manual chop action-axis manual longitudinal cutting	
	Y-axis automated longitudinal cutting	
	Manual consecutive serial sections	
Cutting Chamber Features	2 LED Gooseneck for illumination anywhere in the cutting chamber, large viewing window for sample and cutting process, the sliding hood and door to avoid coolant dripping on the user and ample space for easy sample placement, Innovative basket catches all part after sectioning, A fume extractor, A wash down hose with shut off wall, T-Slot vise table.	No amendment
Cutting Bed	2 corrosion resistant stainless steel T-slot vise table beds accept any standard vises with 12mm T-nuts.	2 corrosion resistant stainless steel T-slot vise table beds accept any standard vises with 10mm or 12mm T-nuts.
Cooling System	Two coolant nozzles are mounted in the wheel guard to ensure a consistent burn -free cut.	Two coolant nozzles are mounted in the wheel guard to ensure a consistent burn -free cut inbuilt or separate cooling tank with minimum capacity of 100L
Cutting wheel diameter	12" (305mm)	No amendment
Auto Y Axis Feed rate	0.3inch per minute - 5.0 inch per minute	0.05 mm-2.5mm/s or better
Accessories required	Recirculating coolant system with cart, Vises as per our offer	No amendment
Spare Requirements	window, parts catch tray, back rubber flap, bottom rubber flap, x-handle, y handle, y axis travel limit switch, lighting units	Necessary spares should be quoted for minimum 2 years trouble free operation.
Full Technical Specification with Pamphlet Required		
Should quote for 5 Years AMC		


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